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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,693	11/04/2003	Ioan Sasu	2993-478US	4905

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EXAMINER	
EDGAR, RICHARD A	
ART UNIT	**PAPER NUMBER**
3745	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,693	SASU ET AL.	
	Examiner	Art Unit	
	Richard Edgar	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 Nov. 2003 under 37 C.F.R. §1.53(b)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7-9,11-21,26,27 and 29-31* is/are rejected.

7)☒ Claim(s) *4-6,10,22-25,28 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/4/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The examiner notes Applicant has included a brief summary of the invention in harmony with the invention as originally claimed. If Applicant chooses to amend the claims in accordance with 37 C.F.R. § 1.111, the brief summary of the invention should be amended accordingly (MPEP §§ 608.01(d) and 1302.01).

Claim Objections

Claim 19 is objected to because of the following informalities: In line 1, "define" should be -- defined --. Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sheet metal elements must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicant is reminded of the examiner's duty to broadly interpret the claims (MPEP § 2111).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 8, 9, 11 and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,854,126 (Chevis et al. hereinafter).

In the first interpretation, Chevis et al. disclose a gas turbine engine diffuser comprising a bowl-shaped diffuser casing 22, 24 and a cover 46, 50 nested into the bowl-shaped diffuser casing and cooperating therewith in defining a diffuser passage 56 having a channeled entry portion in fluid flow communication with a vaned exit portion via a vaneless intermediate portion 58, said channeled entry portion being divided into an array of inlet flowpaths by a first set of vanes 60, and wherein said vaned exit portion is divided into an array of outlet flowpaths by a second set of vanes 62.

Part of the cover 46 is a flat annular plate.

The vanes 60 are machined (col. 4, lines 24-27).

In an alternative interpretation, Chevis et al. disclose a gas turbine engine diffuser comprising a bowl-shaped diffuser 46, 50 casing and a cover 22 nested into the bowl-shaped diffuser casing and cooperating therewith in defining a diffuser passage 56 having a channeled entry portion in fluid flow communication with a vaned exit portion via a vaneless intermediate portion 58, said channeled entry portion being divided into an array of inlet flowpaths by a first set of vanes 60, and wherein said vaned exit portion is divided into an array of outlet flowpaths by a second set of vanes 62.

The first set of vanes 60 extend integrally from an inner surface 48 of the bowl-shaped diffuser casing 46, 50, and wherein said cover 22 is provided with a substantially smooth inner surface, wherein each vane 60 is engaged with the cover 22 (see col. 4, lines 12-17).

Part of the cover 22 is formed as a flat plate (see Figure 2). The vanes 60 are circumferentially distributed (see Fig. 1) on an inner surface 48 of the casing 46, and wherein the flap plate 22 closes the grooves defined by the vanes 60.

The vanes 60 are machined (col. 4, lines 24-27).

Regarding claim 29, since Chevis et al. *disclose* a diffuser, they are effectively *providing* a diffuser, which comprises: a bowl-shaped casing having an annular disc surface 46 provided with a circumferential array of vanes 60, and an annulus 50 projecting axially from a periphery of the disc surface, said annulus defining a circumferential array of axially-extending exit passages, and securely nesting a cover 22 in the bowl-shaped casing to cooperate with the island vanes 60 to form a circumferential array of generally radially oriented inlet passages in fluid flow communication with the axially extending exit passages.

The disc surface 46 and the annulus 50 are cast (col. 2, lines 1-2).

Deswirl-vanes 62 are also cast (col. 4, lines 6-11).

Claims 7, 12, and 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,854,126 (Chevis et al. hereinafter) as evidenced by Merriam-Webster Collegiate Dictionary.

Applicant is reminded that an examiner may use a second reference in a 35 U.S.C. § 102 rejection when the second reference is being used to explain the meaning of a term used in the primary reference.

With respect to claim 7, Chevis et al. disclose a gas turbine engine diffuser comprising a bowl-shaped diffuser 46, 50 casing and a cover 22 nested into the bowl-shaped diffuser casing and cooperating therewith in defining a diffuser passage 56 having a channeled entry portion in fluid flow communication with a vaned exit portion via a vaneless intermediate portion 58, said channeled entry portion being divided into an array of inlet flowpaths by a first set of vanes 60, and wherein said vaned exit portion is divided into an array of outlet flowpaths by a second set of vanes 62. The bowl-shaped diffuser casing 46, 50 comprises a one-piece casting including a vaned disc 46 on a first side 48 of which are formed said first set of vanes 60, and an annulus 50 extending from said first side 48 of said vaned disc, said annulus 40 including inner 52 and outer 24 annular walls integrally connected to each other by said second set of vanes 62. The Merriam-Webster Collegiate Dictionary defines integral as *formed as a unit with another part*. Although Applicants inner and outer annular walls may be integrally cast, the Chevis et al. inner and outer walls are formed as a unit through bolts and throughbores 61, and therefore, integrally connected.

Regarding claim 12, the Chevis et al. reference discloses a diffuser comprising a diffuser casing including: a generally radially extending surface 22 having a first array of vanes 60 integrally formed on (Merriam-Webster Collegiate Dictionary defines integral as *formed as a unit with another part*. Therefore, "integrally formed on" merely means at least two parts being connected as a unit) a rearwardly facing side thereof, and a

generally axially extending annulus 24 projecting rearwardly from a periphery of said radially extending surface 22, said annulus being provided with a second array of vanes 62 defining a plurality of exit air passages through said annulus; and a cover 46 adapted to cooperate with the first array of vanes 60 when secured to the diffuser casing in order to define therewith a plurality of entry air passages in communication with said exit air passages.

The diffuser casing 22, 24, as can be seen in Fig. 2, is bowl-shaped, and the cover 46 is placed in the casing 22, 24.

By way of bolts and throughbores 61, the cover 46 and diffuser casing 22 are pressure fitted.

The vanes 60 are machined (col. 4, lines 24-27).

A vaneless arcuate intermediate passage 58 extends between the inlet and outlet, and defines a bend from a radial direction to an axial direction.

Claims 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over United States Patent No. 4,854,126 (Chevis et al. hereinafter) as evidenced by Merriam-Webster Collegiate Dictionary.

The Chevis et al. reference discloses a diffuser comprising a diffuser casing including: a generally radially extending surface 22 having a first array of vanes 60 integrally formed on (Merriam-Webster Collegiate Dictionary defines integral as *formed as a unit with another part*. Therefore, "integrally formed on" merely means at least two

parts being connected as a unit) a rearwardly facing side thereof, and a generally axially extending annulus 24 projecting rearwardly from a periphery of said radially extending surface 22, said annulus being provided with a second array of vanes 62 defining a plurality of exit air passages through said annulus; and a cover 46 adapted to cooperate with the first array of vanes 60 when secured to the diffuser casing in order to define therewith a plurality of entry air passages in communication with said exit air passages.

The annulus comprises inner 52 and outer 24 concentric walls spaced by the second array of vanes 62.

The cover 46 seals both the inner wall 52 and vanes 60.

Chevis et al. teach in Fig. 2 that the diffuser casing 22 is a unitary piece, but is silent as to if it is formed by casting. The limitation "a one-piece casting" is being treated as a product by process limitation; that is, that the diffuser casing is made by casting. As set forth in MPEP § 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 U.S.C. § 102/103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP § 2113.

Thus, even though Chevis et al. is silent as to how the unitary diffuser casing is made, it appears that the product of Chevis et al. would be the same or similar as that claimed; especially since both applicant's product and the prior art product are made as a unitary piece.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 13, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,854,126 (Chevis et al. hereinafter).

As explained in detail above, regarding claims 1 and 12, Chevis et al. disclose a diffuser with entry passages.

Chevis et al. do not state that the cross-section of the entry passages are D-shaped. However, the resulting cross-sectional shape has been expressed as "various other shapes" (col. 4, lines 1-2). Applicant has not disclosed that the D-shaped cross-section solves a stated problem or is for any particular purpose. Moreover, it appears that the cross-section of Chevis et al., or applicant's invention, would perform equally well with any smooth cross-sectional shape.

Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Chevis et al. such that the cross-sectional shape of the entry passages are D-shaped because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Chevis et al.

Allowable Subject Matter

Claims 4-6, 10, 22-25, 28 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 10 requires a ridge for engagement with an inner sidewall of the diffuser casing. Chevis et al. show the plate 46 comprising the annular inner sidewall 50, and therefore no ridge which extends from the plate to engage with the sidewall. Modifying Chevis et al. to meet this claimed limitation would teach away from the one-piece casting teaching of Chevis et al.

Regarding claims 4-6, 22-25, 28 and 32, Chevis et al. teach a cast diffuser half comprising integrally cast vanes, and not sheet metal elements. Chevis et al. state that the one-piece cast structure is advantageous in that separate production and complex installation are avoided. Therefore, modifying Chevis et al. so that the diffuser comprises sheet metal would require separate elements, which teaches away from the simple unitary element of Chevis et al.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-

4816. The examiner can normally be reached on Monday thru Friday, 8:00 am until 4:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 3745

RE

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3/4/05